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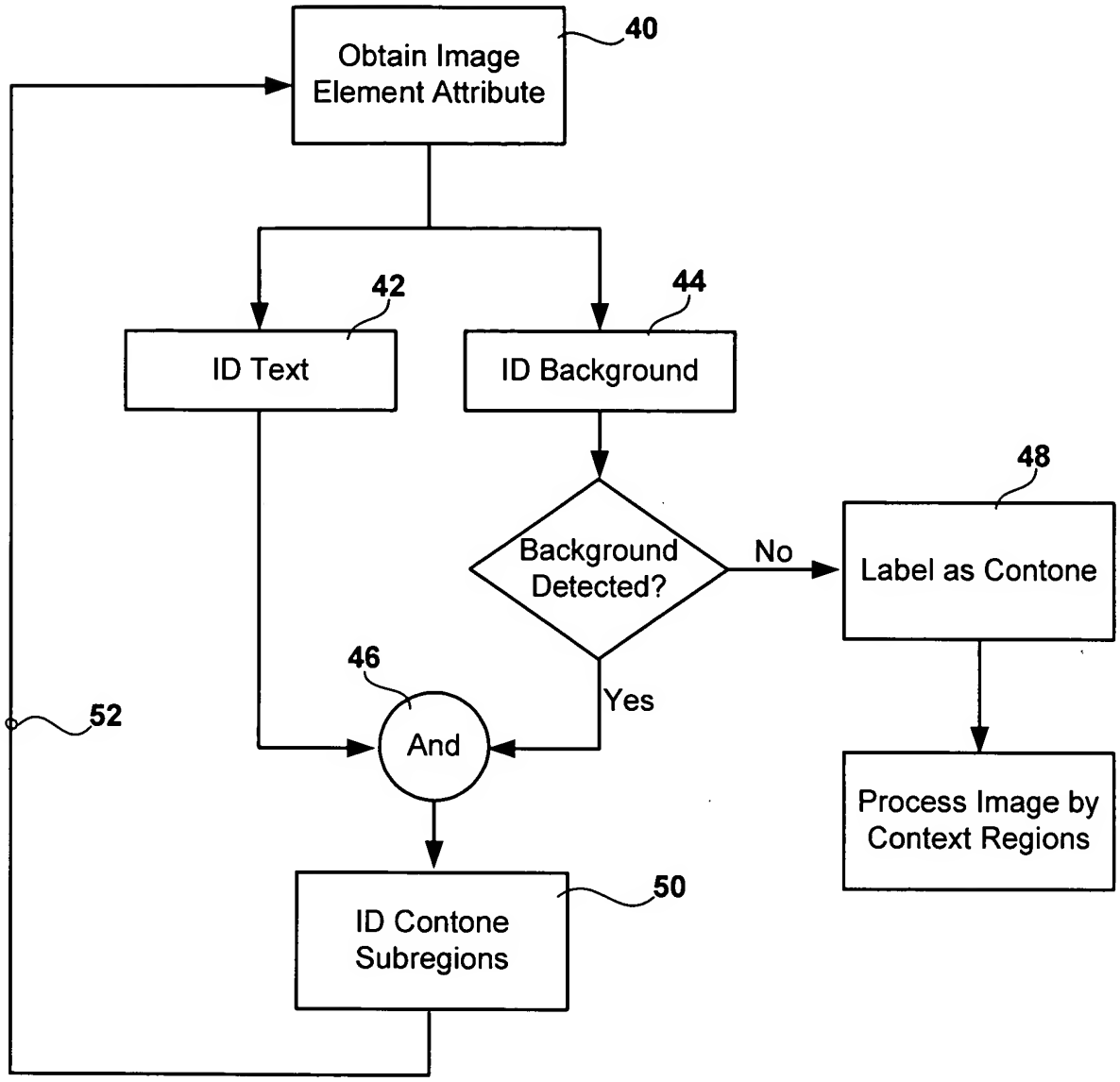
Obtain Image Element Attribute
40
ID Text
42
ID Background
44
Background Detected?
No
48
Label as Contone
Yes
46
And
52
Process Image by Context Regions
ID Contone Subregions
50

Figure 1(a)

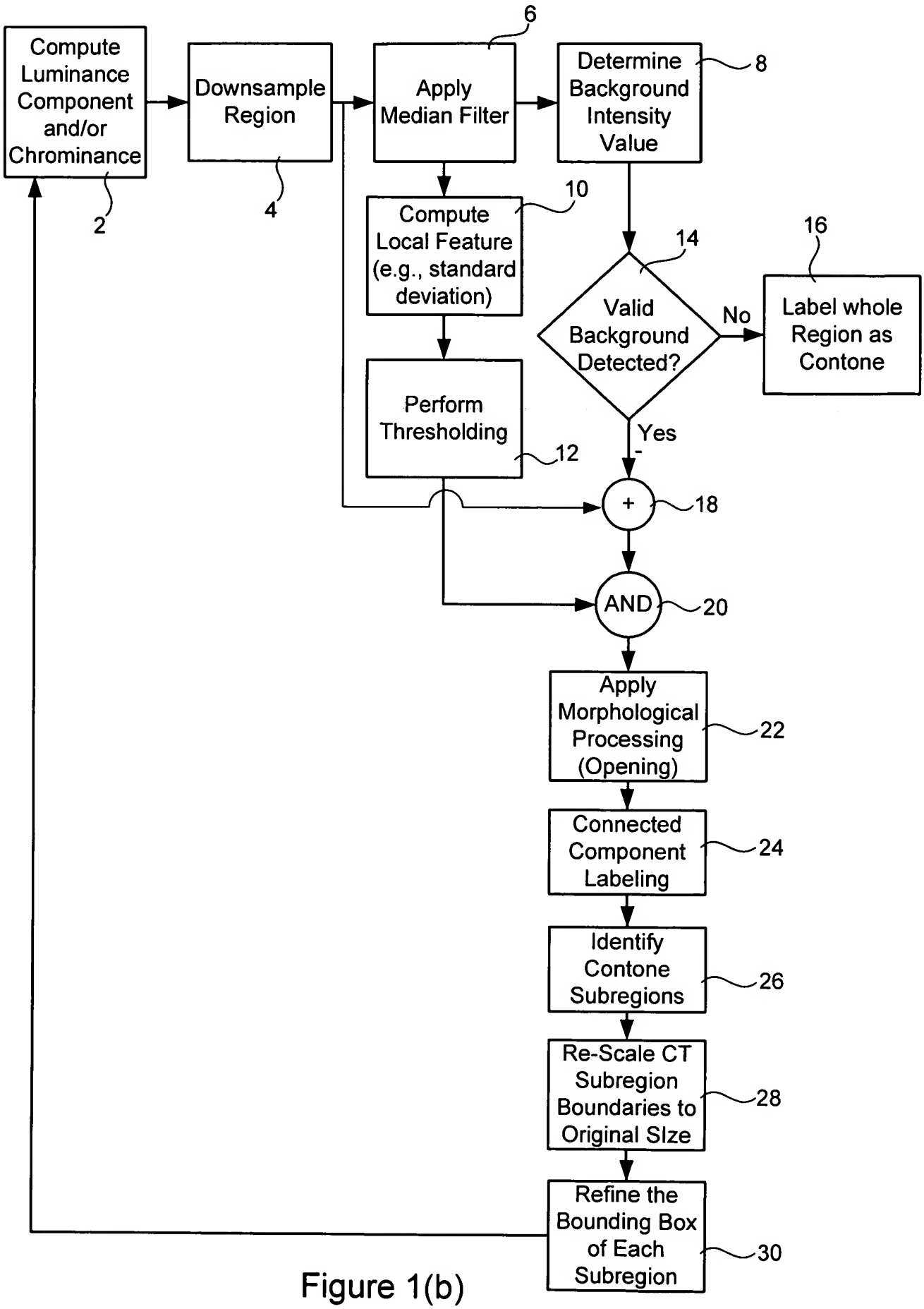
Compute Luminance Component and/or Chrominance
2
Downsample Region
4
Apply Median Filter
6
Determine Background Intensity Value
8
Compute Local Feature (e.g., standard deviation)
10
Perform Thresholding
12
Valid Background Detected?
14
No
Label whole Region as Contone
16
Yes
+
18
AND
20
Apply Morphological Processing (Opening)
22
Connected Component Labeling
24
Identify Contone Subregions
26
Re-Scale CT Subregion Boundaries to Original Size
28
Refine the Bounding Box of Each Subregion
30

Figure 1(b)

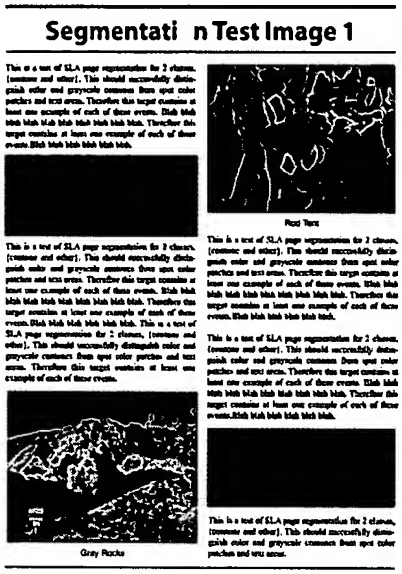

Figure 2(a)

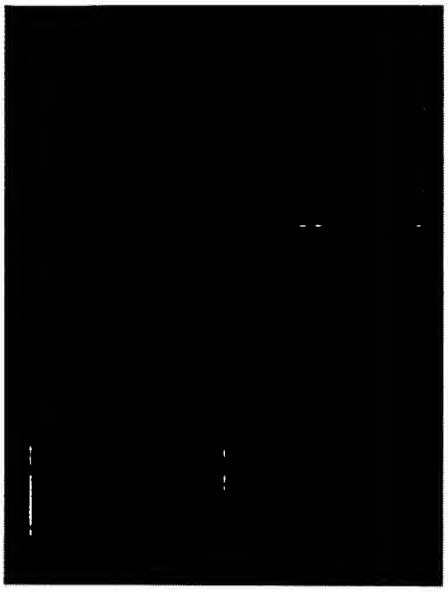

Figure 2(b)

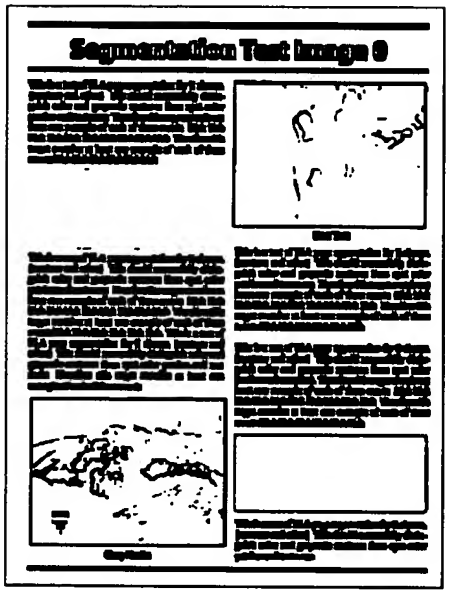

Figure 2(c)

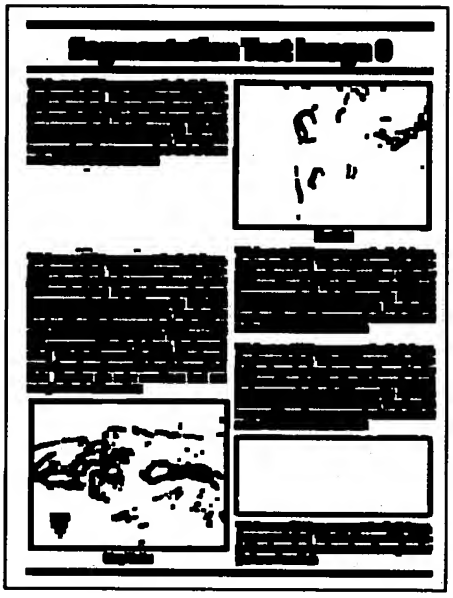

Figure 2(d)

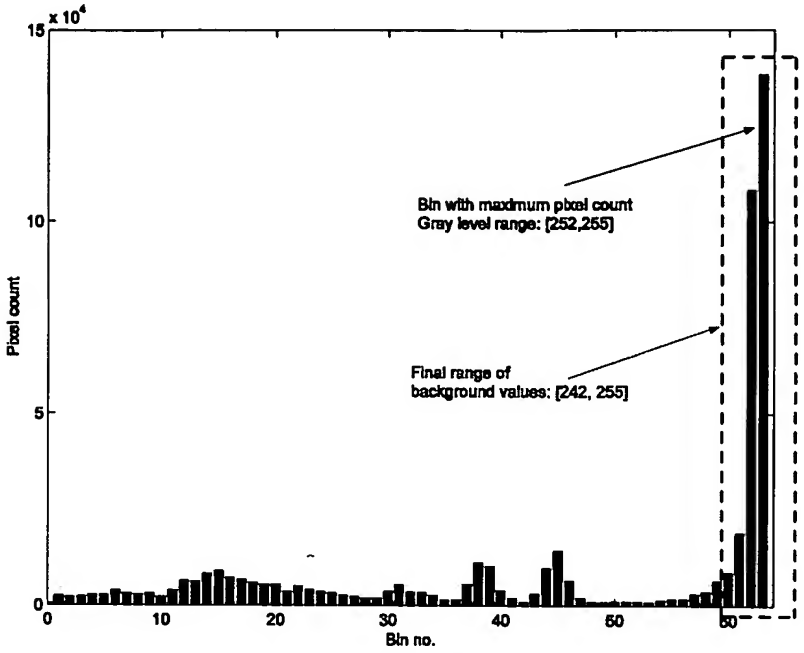

Figure 3(a)

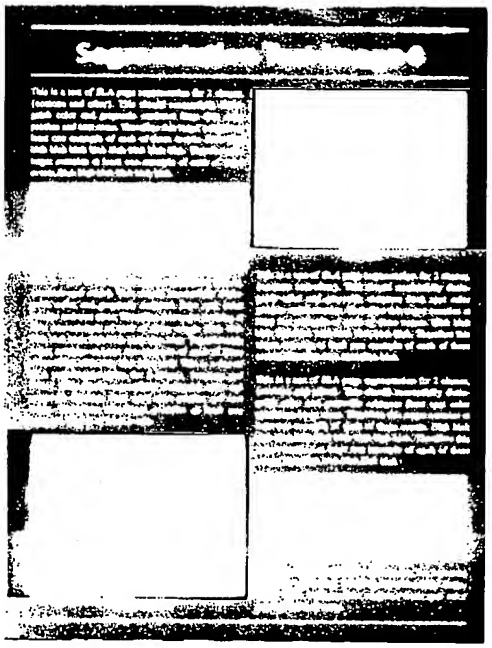

Figure 3(b)

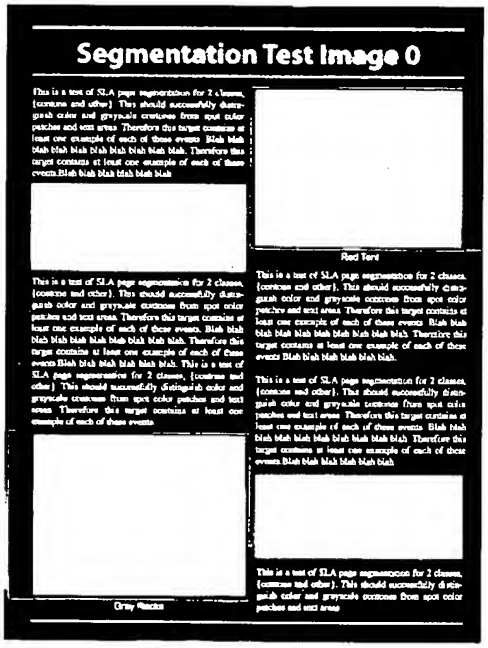

Figure 3(c)

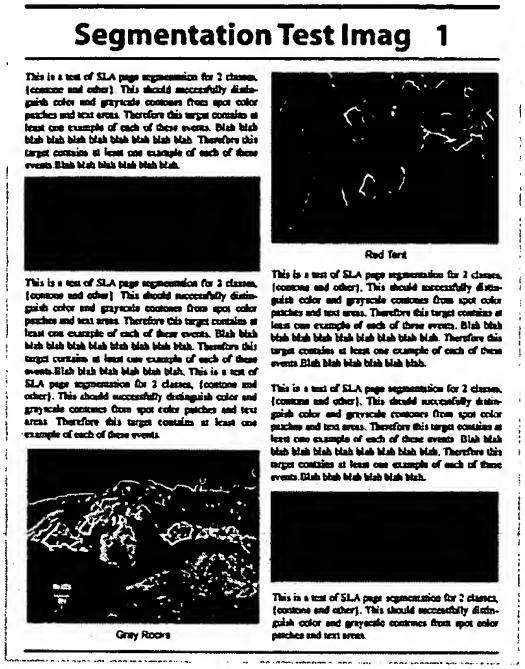

Figure 4(a)

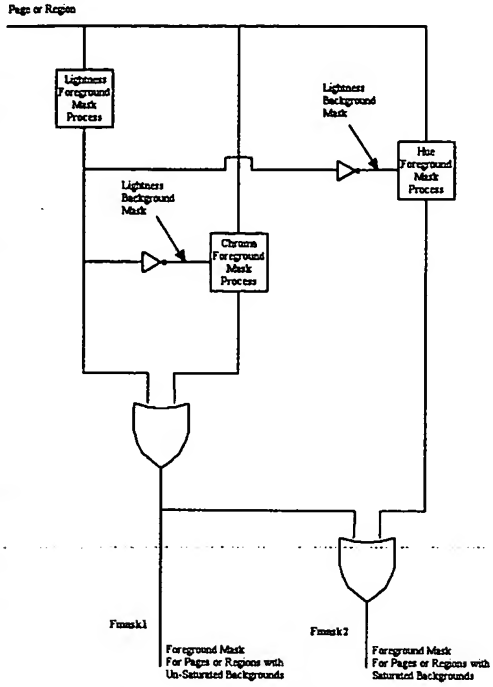

Figure 4(b)

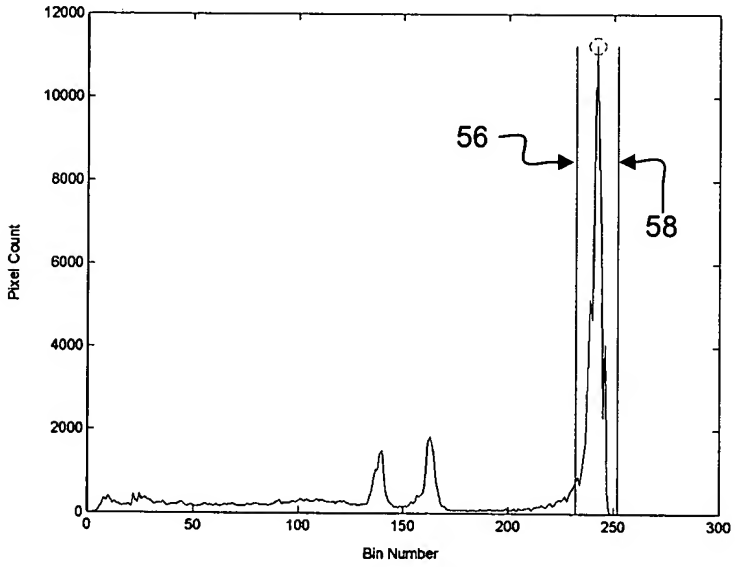

Figure 4(c)

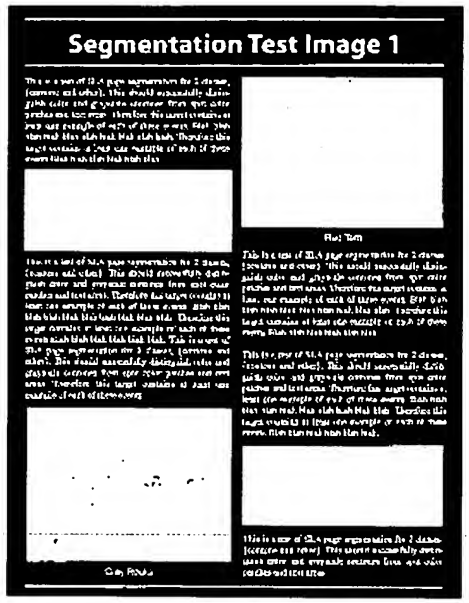

Figure 5(a)

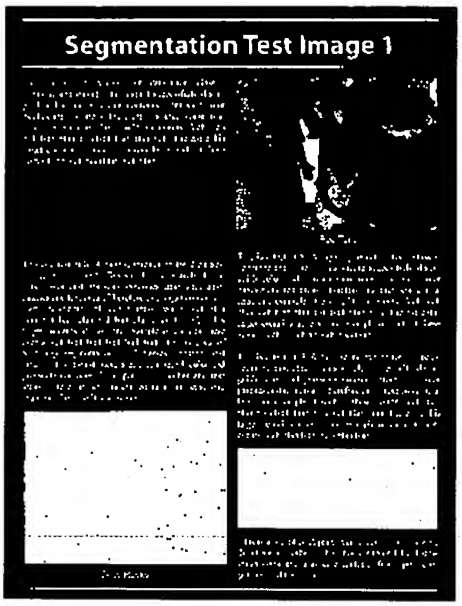

Figure 5(b)

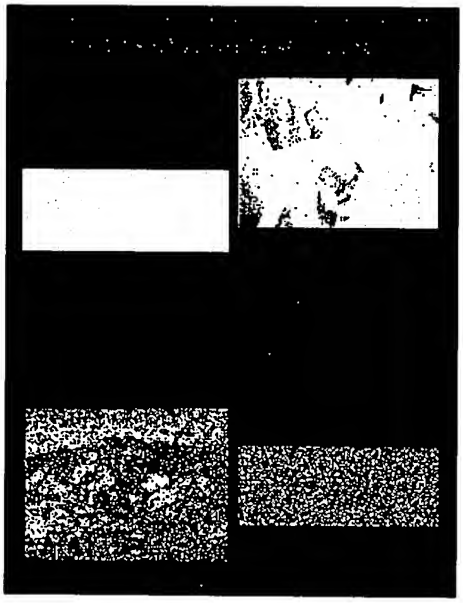

Figure 5(c)

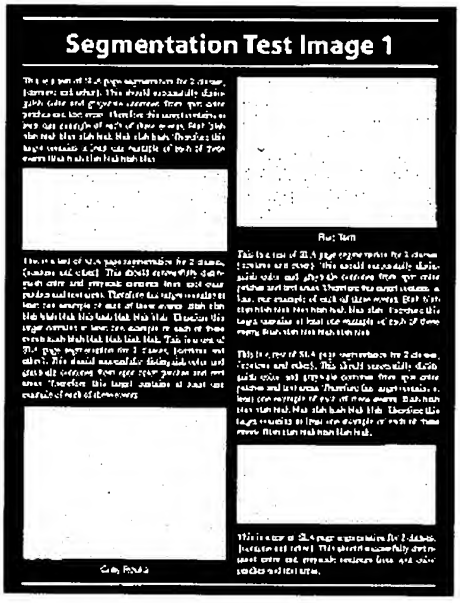

Figure 5(d)

Figure 6(a)

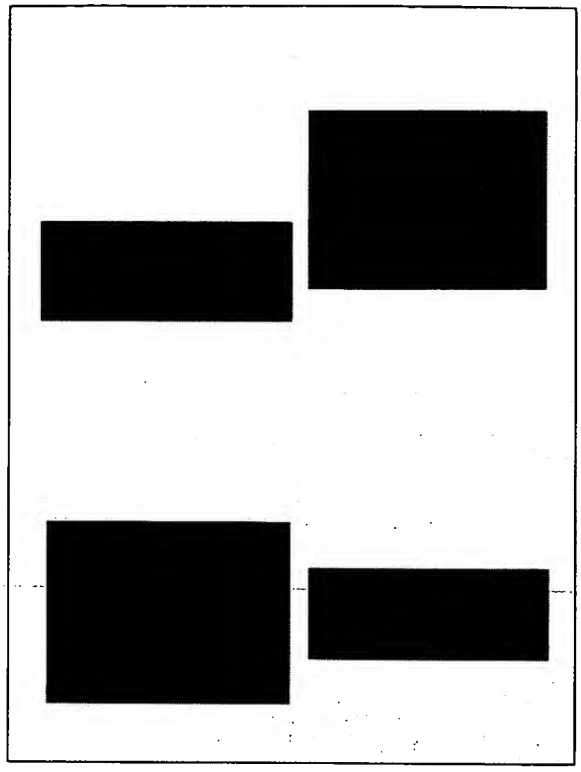

Figure 6(b)

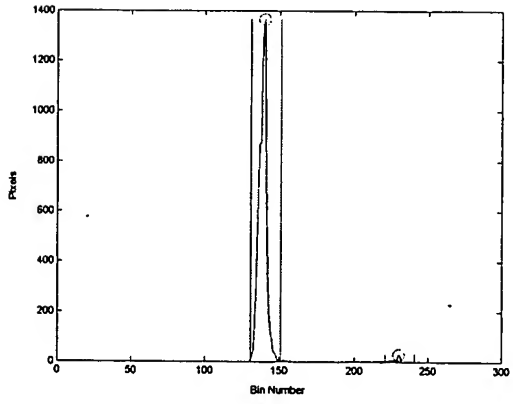

Figure 7(a)

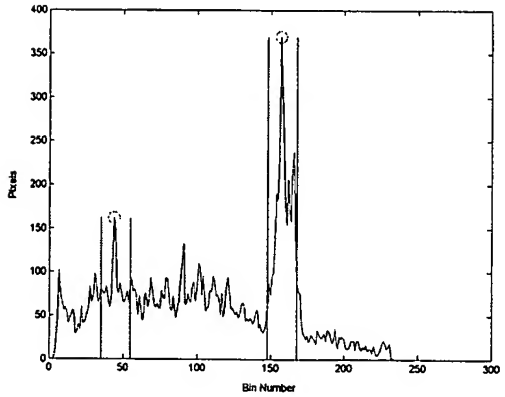

Figure 7(b)

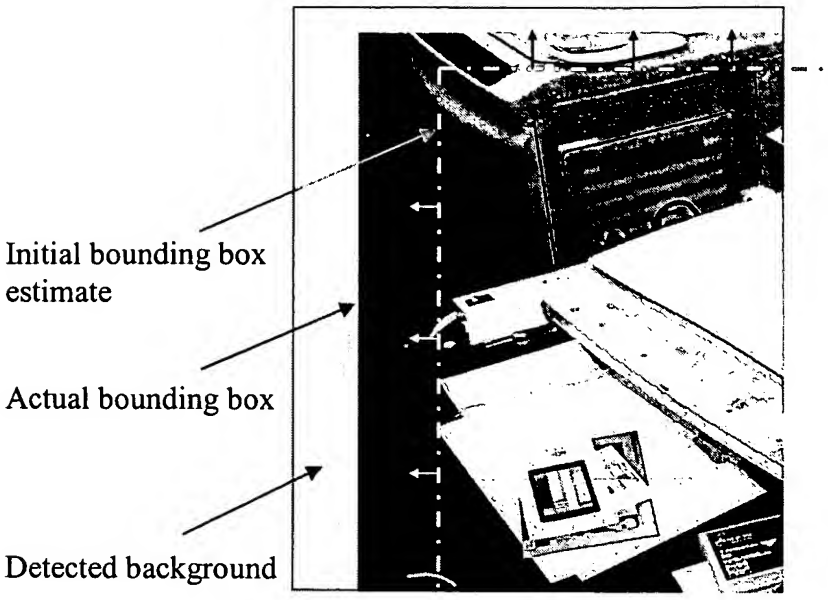
Initial bounding box estimate
Actual bounding box
Detected background

Figure 8